

ML PLANNING CONSULTANCY LTD

FLOOD RISK ASSESSMENT

Proposal: First Floor rear extension to visitor's centre building to form enlarged office.

Site Location: Brickhouse Farm Cottages,
Brickhouse Lane Hambleton Poulton-Le-Fylde, FY6
9BG

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Introduction

The National Planning Policy Framework (NPPF) sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Support in the Planning Practice Guidance is also available.

The NPPF sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

The NPPF also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

As set out in the NPPF, local planning authorities should only consider development in flood risk areas appropriate where informed by a site-specific Flood Risk Assessment. This document will identify and assess the risk associated with all forms of flooding to and from the development. Where necessary it will demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account.

In investigating the flood risk relating to the site, the Environment Agency flood mapping has been reviewed and has confirmed that the site lies within Flood Zone 3. Flood Zone 3 is identified as land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The flood zones categorisation refers to the probability of river and sea flooding, ignoring the presence of defences.

STRATEGIC FLOOD RISK ASSESSMENT

The Strategic Flood Risk Assessment for Wyre Borough Council is dated April 2007 and was produced by Wyre Borough Council.

The SFRA states that countryside areas within the Fylde plain are very low lying and flat with the majority of the area in Flood Zone 3. The area is predominately agricultural in nature with sporadic larger villages.

The main risk of flooding within the area is from tidal sources, in a breach of the coastal or estuary defences scenario. This would lead to significant areas being flooded. The area is also susceptible to flooding from fluvial sources due to the low gradients and difficulty in discharging into Morecambe Bay. This is compounded by rising beach levels at the discharge points. Similarly, sewer flooding, groundwater and highway drainage systems can result in flooding problems as they are interconnected to the watercourses and suffer from poor hydraulics and overcapacity in the urban area.

CONSULTATION & GUIDANCE

The site is identified on the Environment Agency's flood mapping as lying within Flood Zone 3. The main risk of flooding is tidal. A further assessment of Product 4 data acquired from the Environment Agency is included in this assessment.

Introduction

This flood risk assessment and drainage strategy has been prepared on behalf of Mr Ian Rainford in support of a new planning application for a small-scale extension to an existing business premises.

Planning approval was granted for 15/00758/FULMAJ Erection of 5 holiday units and erection of a building for a hydrotherapy pool, visitors centre and cafe for disabled visitors and carers_– in December 2015. Construction of this building is complete.

A further application was made in 2021. Planning approval was granted for 21/00594/FUL - Erection of a two-storey building comprising of visitor's centre, cafe/restaurant, hydrotherapy pool, an on-site laundry facility and an expanded car parking area – in September 2021. This latter application was submitted to deal with differences between the implemented development and the 2015 consent.

A flood risk assessment produced by ML Planning Consultancy Ltd was submitted in support of planning application 15/00758/FULMAJ and was accepted by the Environment Agency, in the consultation response dated 26th August 2016.

The consultation stated that they were satisfied that the proposed development would be safe and that it would not be at an unacceptable risk of flooding or exacerbate flood risk elsewhere, provided that any subsequent development proceeds in accordance with the recommendations of the FRA. They provided the following condition:

The development hereby permitted by this planning permission shall be carried out in accordance with the approved Flood Risk Assessment (FRA) dated 25 August 2016 and subject to the following requirements:

1. Finished floor levels (FFL) of the accommodation units are to be set no lower than 5.9 metres Above Ordnance Datum (mAOD); the FFL of the swimming pool building is to be set no lower than 5.3mAOD.
2. Applicant to be registered with the Environment Agency Flood Warning Scheme.
3. Flood response plan to be implemented and updated as required.
4. Flood proofing measures to be fully implemented.
5. The accommodation units approved by this permission shall not be used for permanent residential occupation.

The mitigation measures detailed in the FRA shall be fully implemented prior to occupation and subsequently in accordance with the timing / phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

This Flood Risk Assessment makes reference to previously agreed FRA's as set out above.

In respect of drainage of the site, planning permission 15/00758/FULMAJ required full details of both foul and surface water drainage to be submitted and agreed in writing by the LPA, under condition 4 of that consent. Application 15/00758/DIS provided details to the LPA and the condition was deemed discharged by way of letter dated 23rd February 2016.

The Site

The application site is located to the south of Brickhouse Lane, in a rural area north of the settlement of Hambleton. The established business on site provides holiday accommodation adapted for mobility access. There are a range of buildings forming the accommodation, a visitors' centre including café and a manmade lake at the site's centre.

A drain, classified as a Main River, lies along the site's eastern boundary. The drain flows to the south to discharge into the River Wyre at Wardley's Pool around 540 metres to the southwest of the site. The drain is protected from the tidal influences of the River Wyre by a flood gate and sluices.

The site lies around 540 metres north of the River Wyre and approximately 6 km from Pilling Sands and the Lune Estuary. Tidal flood defences are along the River Wyre and River Lune estuary.

Surface water runoff is dealt with in the complex of buildings via a piped system which drains to the man-made onsite lake. During formation of the lake, existing field drains were intercepted, which discharged surface water to the Main River on the eastern boundary. An overflow was installed in the lake to maintain this discharge.

Access to the site is from Brickhouse Lane and Carr Lane (A588) to the north.

The Proposal

The planning application relates to first floor rear extension forming an enlarged office, to the hydrotherapy and visitors centre building approved under application:- *21/00594/FUL - Erection of a two-storey building comprising of visitor's centre, cafe/restaurant, hydrotherapy pool, an on-site laundry facility and an expanded car parking area – Permitted 01/09/21*

The proposal seeks consent for an enlarged office area, at the rear of the first floor of the existing visitors' centre. The new space will create an enlarged office which will solve current issues with office capacity.

The development projects from the rear of the building by 5 metres, the length across the rear is 14.8 metres. The eaves of the rear roof slope of the main building is 6.9 metres, the roof of the projection will continue over the 5 meter projection and finish in line with the extension at first floor, having a finished height of 6.6 metres. The extension will be constructed in matching materials of the host building. 3 new windows will be in the west facing wall.

In terms of the development considered in this flood risk assessment, the development involves an extension at first floor, building over a single storey projection at ground level.

Paragraph 65 of the Flood Risk and Coastal Change section of the National Planning Practice Guidance classifies the development as 'less vulnerable', in flood risk terms. Table 3 Flood risk vulnerability and flood zone 'compatibility' indicates that development of this type is appropriate in a Flood Zone. The proposed office extension constitutes 74 square metres of new floor space and therefore falls to be defined as a *Minor non-residential extension* and as such is defined as Minor development, in relation to flood risk, as defined by paragraph 46 in the NPPG. The guidance goes onto state that minor developments are unlikely to raise significant flood risk issues.

The development has now been carried out on site and is in accordance with the plans in terms of finished floor levels and the flood risk mitigation proposed.

The Flood Risk Assessment for this application therefore relates to:-

- A small scale to the existing office space, at the first floor in the building on the west facing rear elevation.

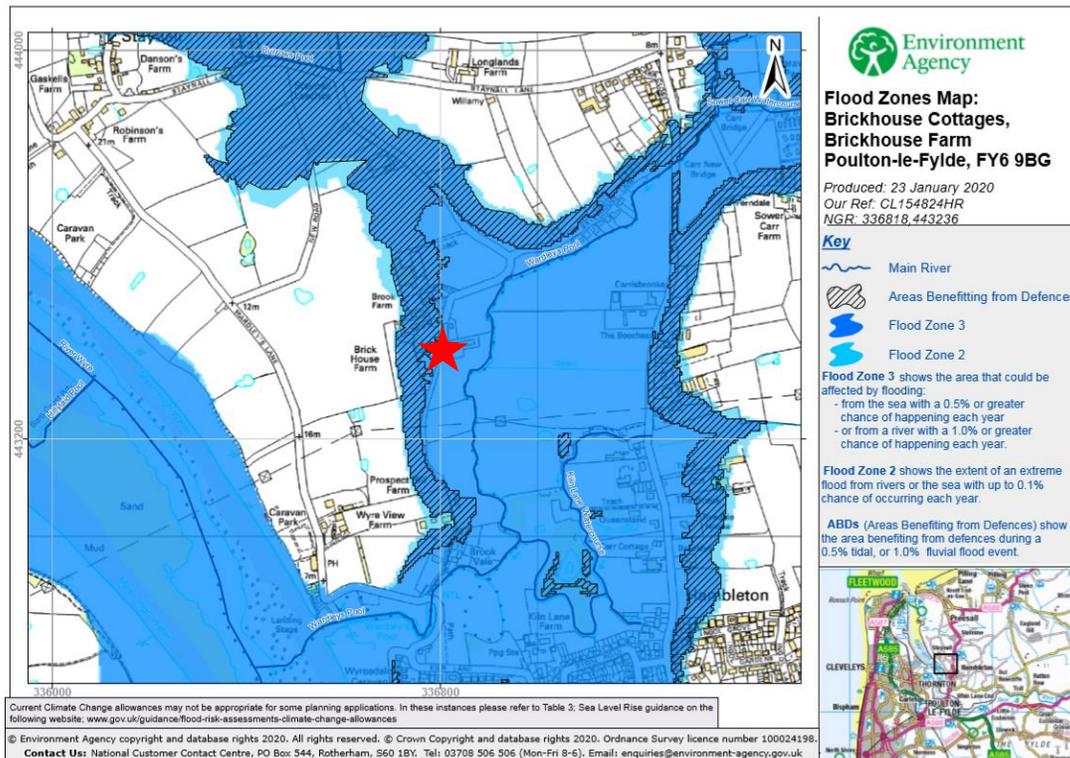
Existing Site Drainage

There are two man-made lakes which have been established on the site for near to ten years. Following LPA approval, the lakes serve as catchment for surface water drainage on the site with a freeboard allowance for flood events.

Surface water runoff from the existing roofs and hard standing on the site is collected by a piped system and discharged into the existing on-site lake.

The building is served by a suitably sized package treatment plant for foul drainage, which has a final discharge to the watercourse on the western boundary of the site. Grey water from the proposed laundry discharges to an established reed bed on the site.

Flood Map for Planning



There are a range of flood zones on the site as defined by the red star above.

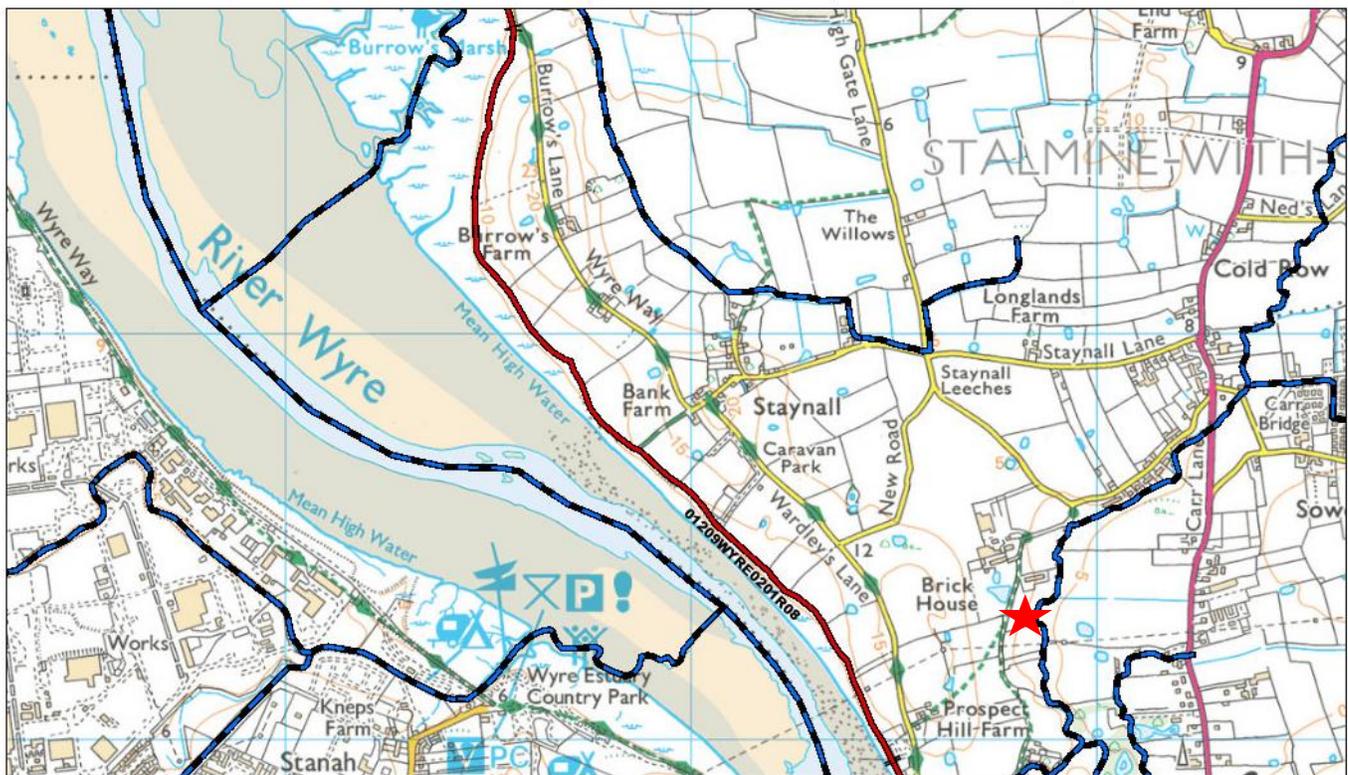
- Flood Zone 3 undefended covers the majority of the site directly south of Brick House Lane. This is considered to arise from a fluvial source relating to the watercourse which runs along the eastern boundary.

- The watercourse is maintained by the Environment Agency along with obligations incumbent on the land owner via riparian ownership legislation.
- This area of the site is developed including a range of holiday cottages and the subject hydrotherapy building.
- Flood Zone 3 defended covers the western portion of the site which is mainly occupied by the applicant's home and further domestic buildings and garden areas.
- The proposal falls within the Flood Zone 3 undefended area.

Product 4 Assessment

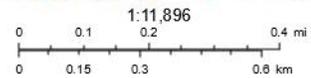
Tidal flood defenses

The tidal defences information indicates that the flood defences benefitting this site are formed by high ground between Wardley's Pub and Burrow's Lane, for just over 2 kilometers and is private land. Effective Crest Levels in the undefended and defended scenario are given at 7.34 mAOD (UCL) and 7.72 mAOD (DCL). Flood Channels are also highlighted and are affected by a breach of defences. This gives a design flood level for a breach scenario, relating to overtopping, which is extreme event which is discussed in the FRA.



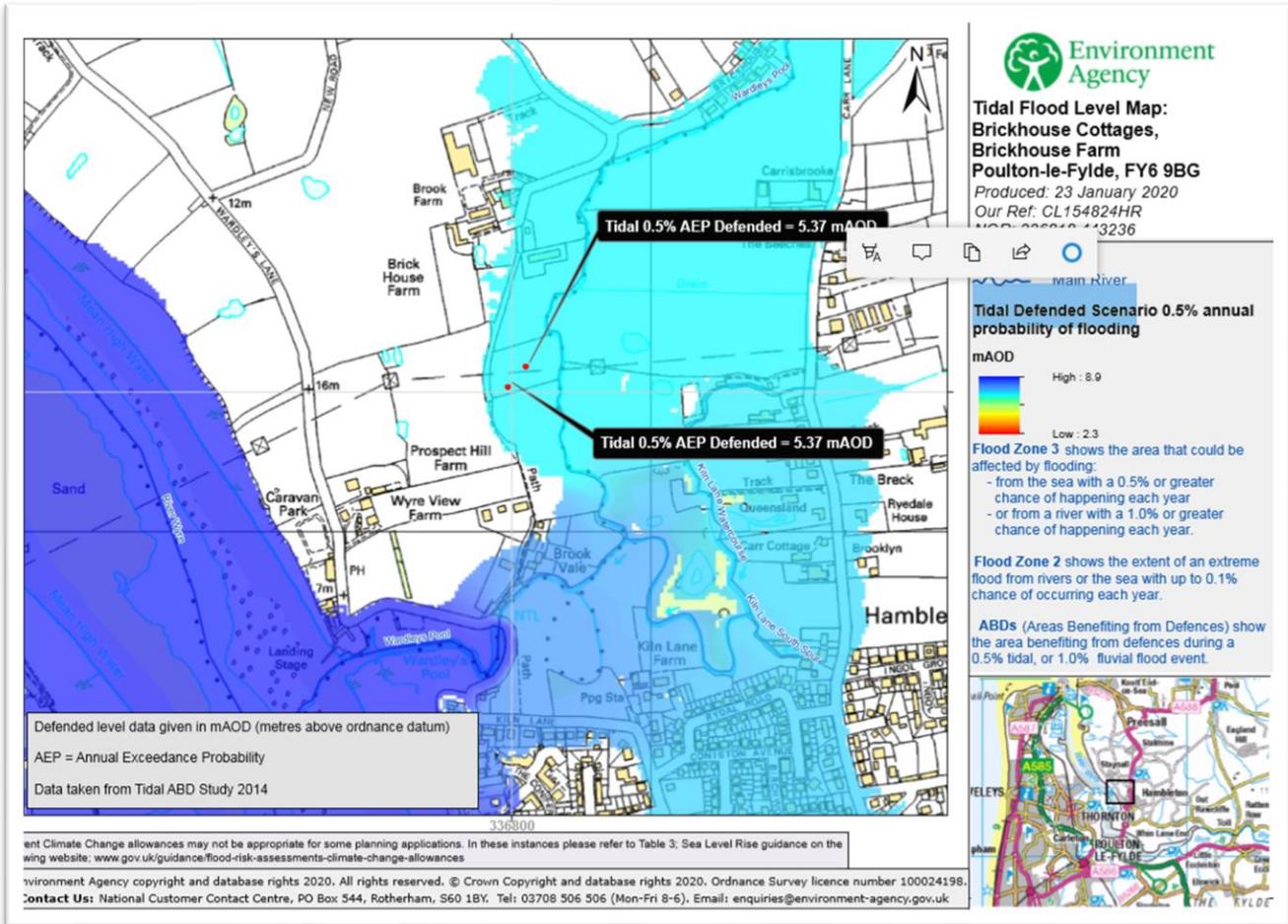
November 4, 2019

- Structures OS Traditional Maps
- Channels
- Defences



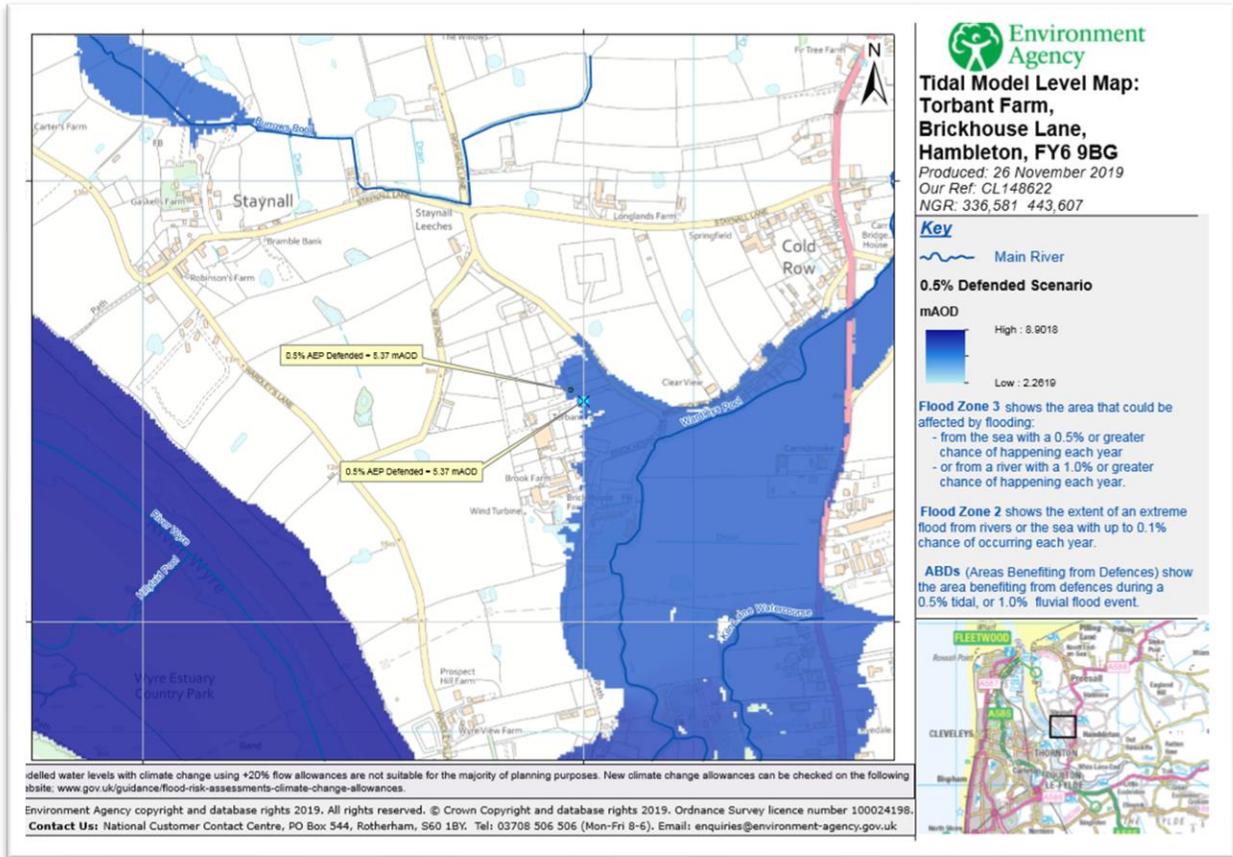
01209WYRE0201R08	SD 36497 42946	High Ground	Tidal	Wardley's Pub to Burrow's Lane	Private	25	3	7.34	7.72	2	2227.8	-
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Tidal Defended Scenario 0.5%



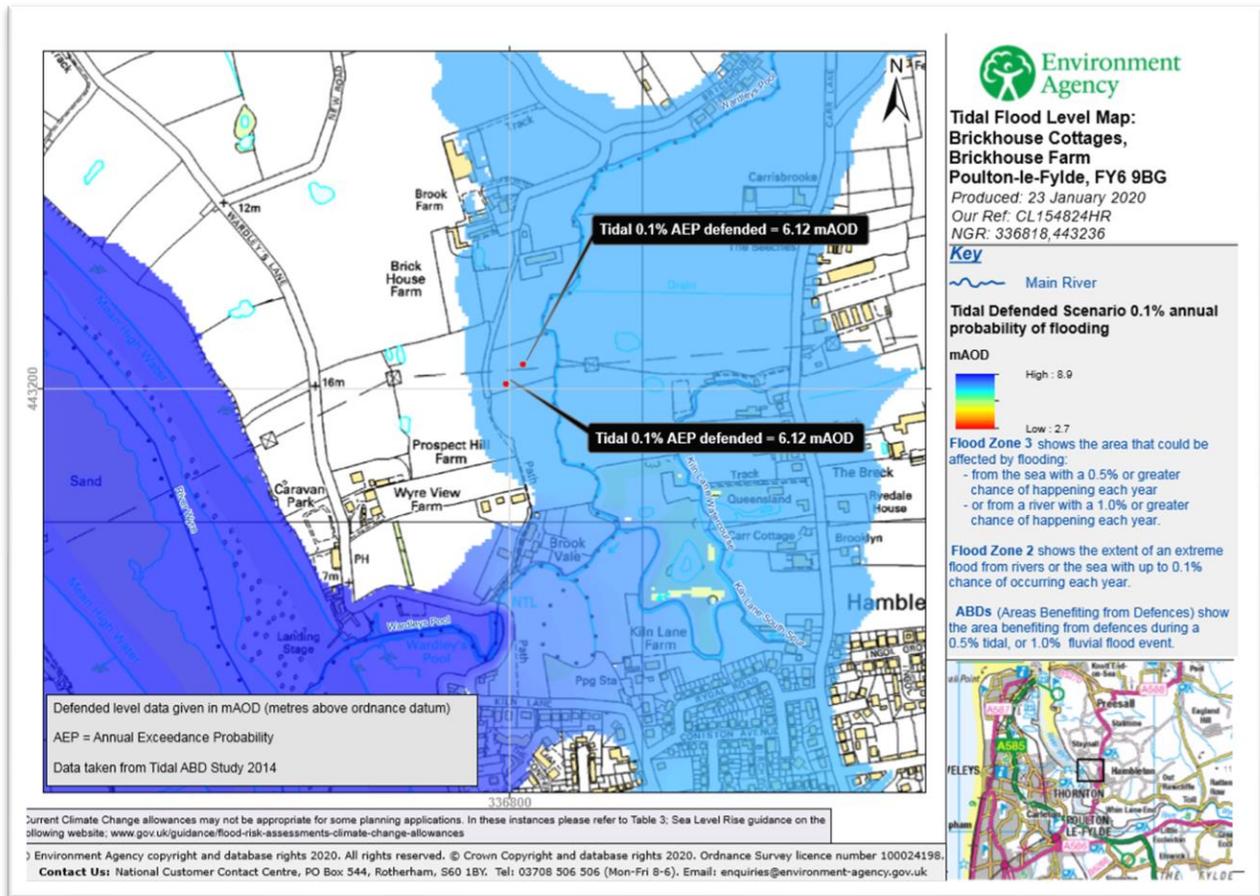
Areas of the site fall within FZ3 undefended and this is reflected by plate 1 of the product 4 pack. The undefended tidal scenario has a 1:200 annual probability. The color value chart indicates that the modelled level on the site of 5.37 mAOD in this scenario is in the mid-range, being well below the uppermost level of 8.9 mAOD. The flood scenario indicates the flood waters would arise from the watercourses identified as Main Channels, from a tidal flood event. The design flood level in this scenario is 300mm above the finished floor levels the existing building to be extended, the flood risk in this scenario would not affect the first floor which has been created in the building.

Tidal Defended Scenario 0.5%



Areas of the site fall within FZ3 defended and this is reflected by plate 2 of the product 4 pack. The data shows flood risk to the site in a Tidal Defended Scenario 0.5%, the risk is 1:200 annual probability. The color value chart indicates that the modelled level of 5.37 mAOD on the site in this scenario is within the mid-range. The uppermost level in the defended scenario is 8.9018 mAOD. The flood scenario indicates the flood waters would arise from the watercourses identified as Main Channels, in an overtopping scenario affecting defense asset reference 01209WYRE0201R08. The precise location of the proposed building is not affected and falls to be considered FZ1 in this scenario. The proposal does not require mitigation for the 1:200 defended scenario.

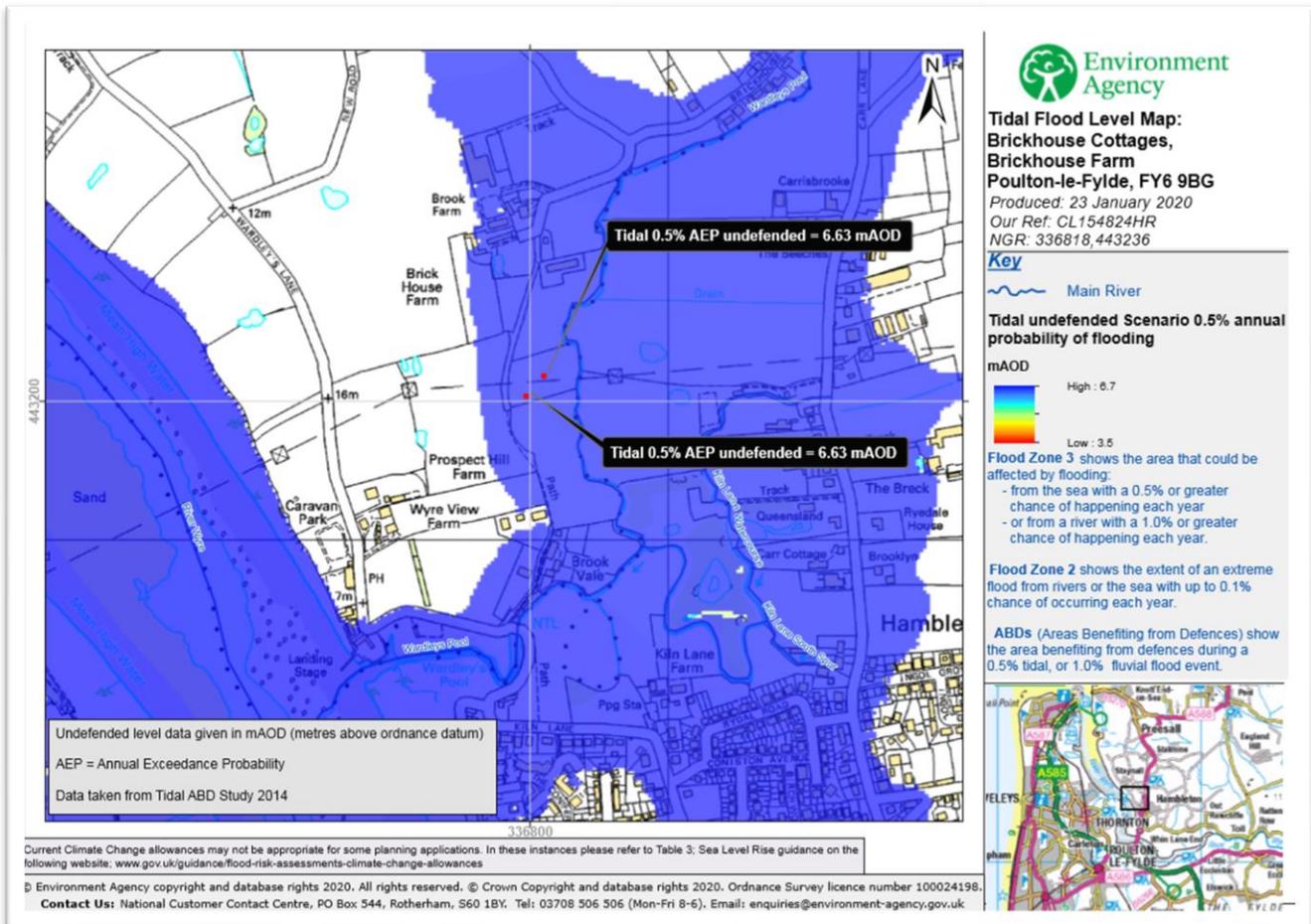
Tidal Defended Scenario 0.1%



In this defended scenario the flood outlines appear to relate to the flood channels, which would be affected in the tidal flood risk location. The color value chart indicates that the modelled level on the site in this scenario is in the mid-range of 6.12 mAOD, 2.78 metres below the uppermost level of 8.9 mAOD.

The site is susceptible to this FZ3 defended and proposal falls within the flood risk zone under this scenario. The risk has a 1:1000-year annual probability and is considered an unlikely and extreme event and reflects modelling for a tidal breach event

Tidal Undefended Scenario 0.5%

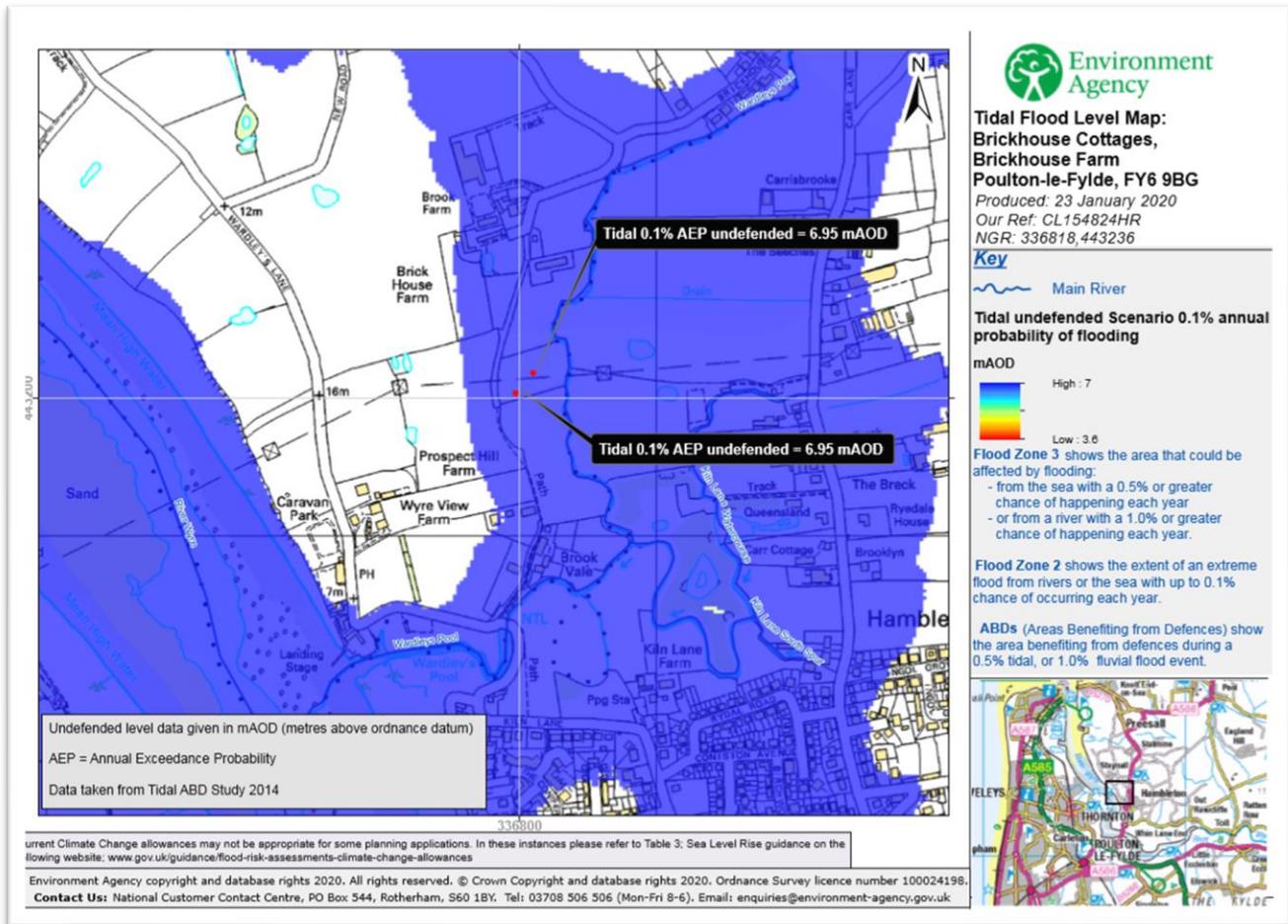


In this undefended scenario the flood outlines appear to relate to tidal flood flow paths which would not be mitigated by existing tidal defences.

The color value chart indicates that the modelled level on the site in this scenario is high at 6.12 mAO, just below the uppermost level of 6.7 mAO.

The risk has a 1:200 year annual probability. The proposal falls within the flood risk zone under this scenario and so flood avoidance measures are also triggered in this scenario. Design Flood Level accounts for this by raising internal floor by 300mm above external ground levels.

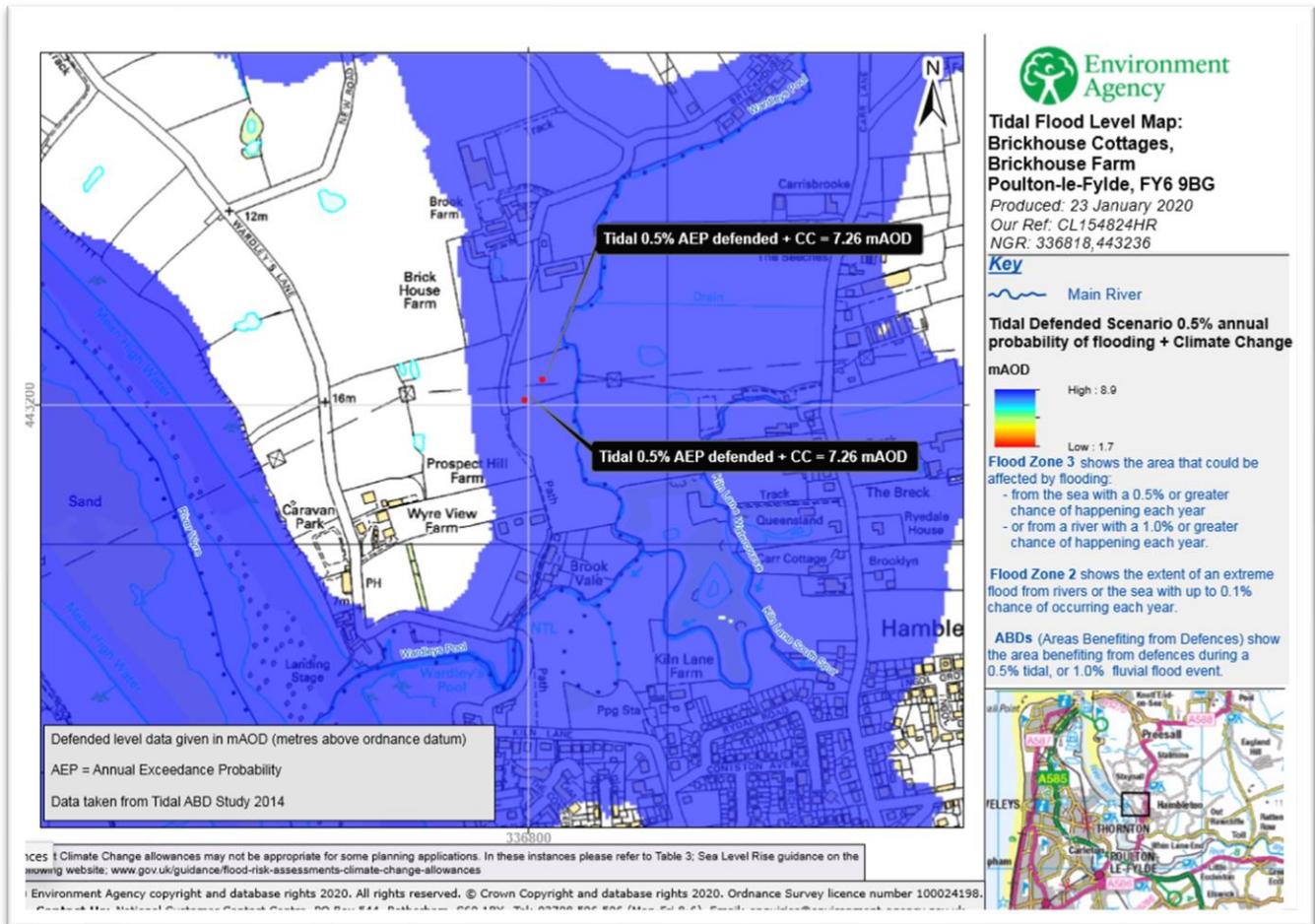
Tidal Undefended Scenario 0.1%



Areas of the site fall within FZ3 undefended. The data shows flood risk to the site in a Tidal Undefended Scenario 0.1%, the risk is 1:1000 annual probability. The color value chart indicates that flood risk on the site in this scenario is high. The uppermost level in the undefended scenario is 7 mAOd.

In this undefended scenario the flood outlines appear to relate to tidal flood flow paths which would not be mitigated by existing tidal defences. Flood avoidance measures are also triggered and the previously agreed Design Flood Level accounts for this by raising internal floor levels.

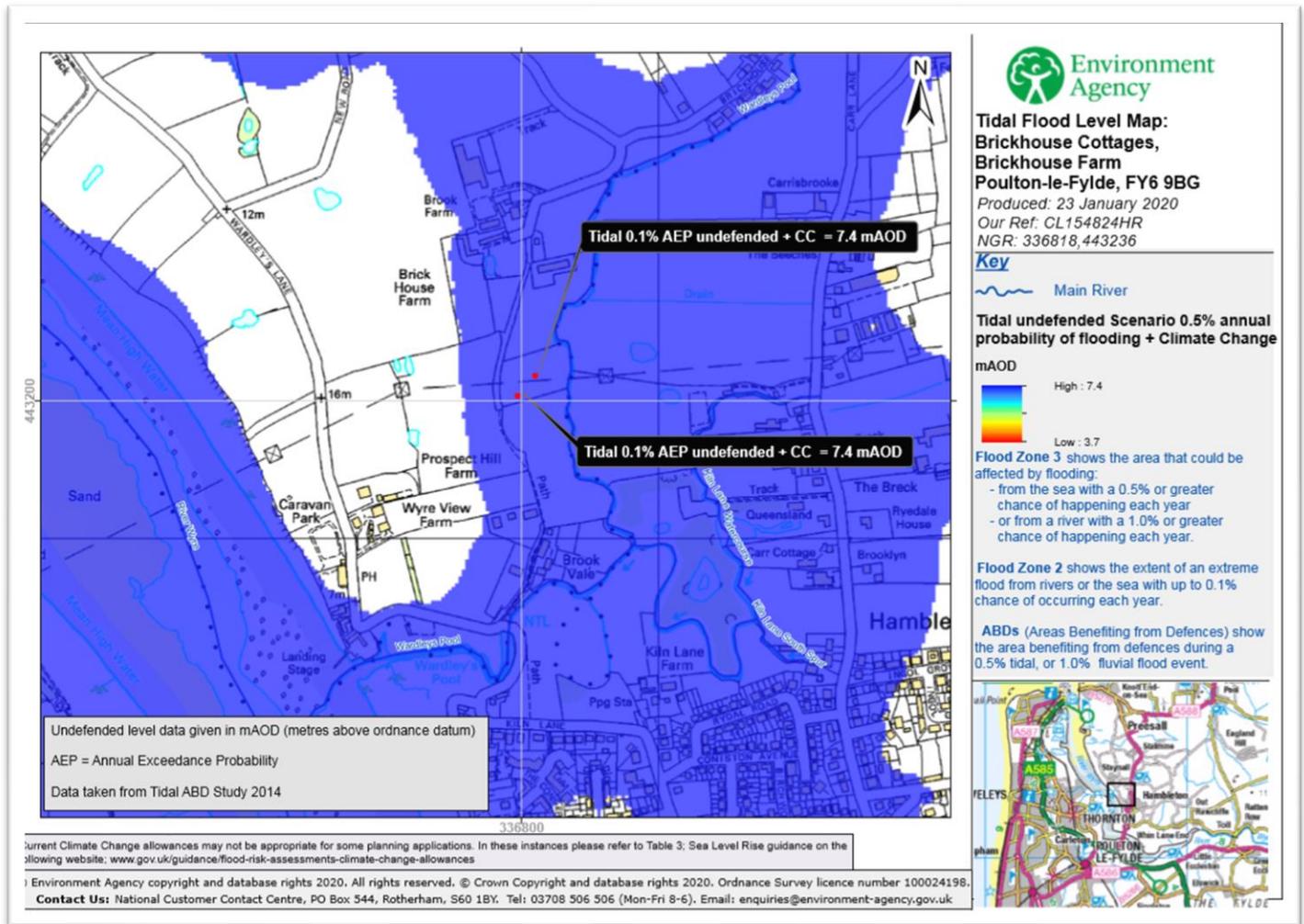
Tidal Defended Scenario 0.5% plus Climate Change



In this defended scenario the flood outlines appear to relate to the flood channels, which would be affected in the tidal flood risk location.

The color value chart indicates that the modelled level on the site in this scenario is 7.26 mAO, below the uppermost level of 8.9 mAO. The risk has a 1:1000 annual probability and as such is considered unlikely and an extreme event. Existing ground levels at the site are below the modelled level in this scenario, the proposal does not require mitigation for the 1:1000 defended scenario.

Tidal Undefended Scenario 0.5% plus Climate Change

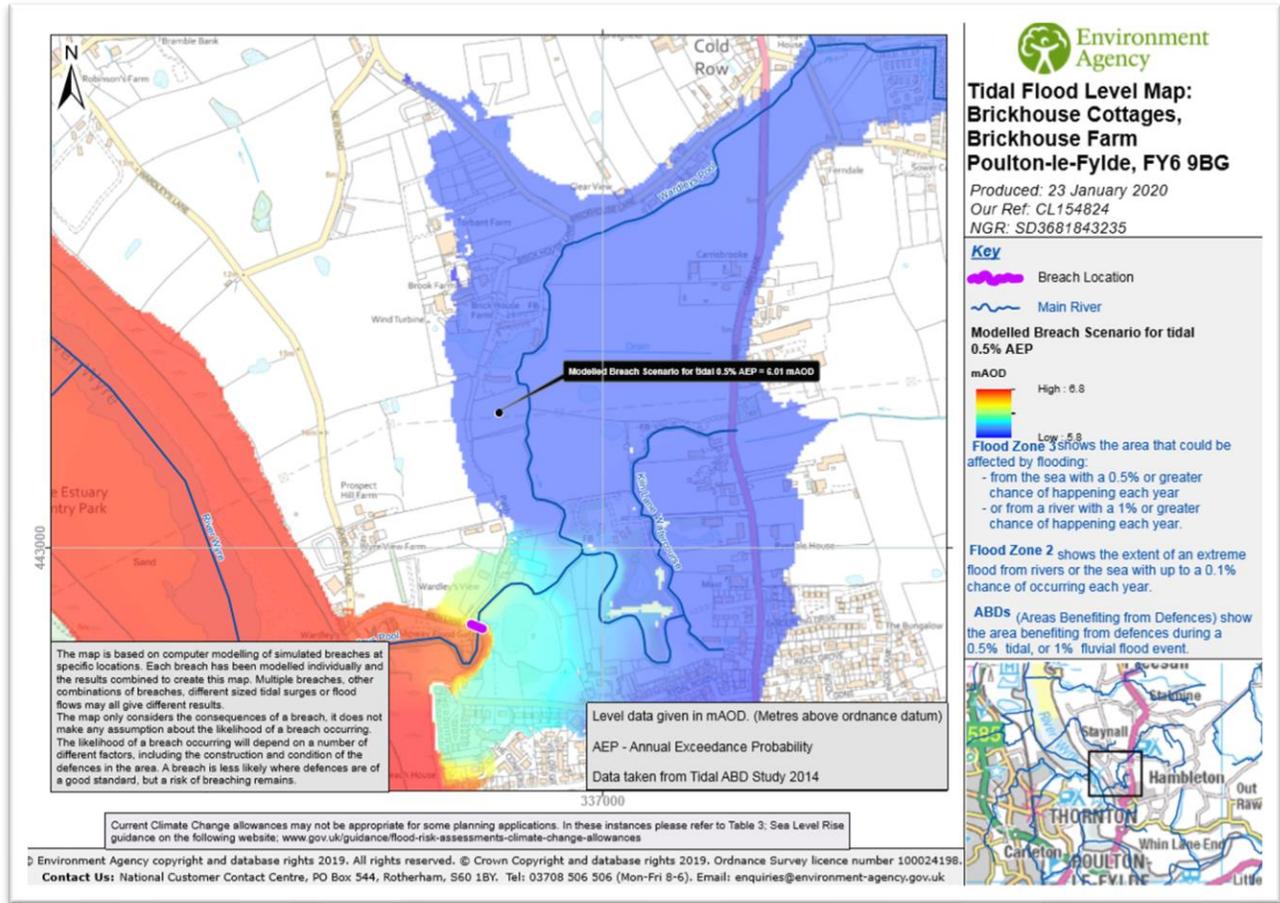


In this undefended scenario the flood outlines appear to relate to tidal flood flow paths which would not be mitigated by existing tidal defences.

The color value chart indicates that the modelled level on the site in this scenario is 7.4 mAOD which is at the uppermost level.

Existing ground levels at the site are below the modelled level in this scenario, the proposal does not require mitigation for the 1:200 defended scenario.

0.5% Defended Breach Scenario



The color value chart indicates that the modelled level on the site in this scenario is 6.01 mAO. Existing ground levels at the site are below the modelled level in this scenario, the proposal does not require mitigation for the 0.5% breach scenario.

Mitigation and Building Design

The best means of ensuring the development is safe from flood risk in the identified scenarios is to raise the internal floor levels comparative to existing external ground levels, potential flood water depths are within the range which accepts this form of flood avoidance.

The site lies within Flood Zone 3 defended and Flood Zone 3 undefended.

The proposal concerns an extension to the existing office space at first floor level, at the rear of the existing visitors building. An extension at ground floor, forming a laundry, was approved under application 21/00594/FUL. This development has commenced and an application to discharge attached conditions is being examined by the LPA.

As this development is at first floor, there are no changes to ground levels or to previously agreed finished floor levels. It is considered that previously agreed FRA's and mitigation contained appropriately addresses flood risk issues on this site, which the proposed development will not alter

Safe access and egress

The site is in an area benefitting from the Environment Agency's flood warning service and the business operators are to be registered to receive free flood warnings when flooding is expected to enable the evacuation of people for a range of flooding events up to and including the extreme event. An adopted evacuation plan for the development is provided.

CONCLUSIONS & RECOMMENDATIONS

Previously agreed mitigation in built to the building design has been agreed by the EA and implemented on site. Ground levels and finished floor levels will not alter and the development is at first floor, approximately 3.7 metres above the ground.

According the NPPG, the type and scale of the development proposed is classed as 'less vulnerable' minor development, which is unlikely to raise significant flood risk issues.

The risk of fluvial flooding arises from the main channels identified on the flood map for planning which do not benefit from the tidal flood defences in the area.

The tidal flood risk affecting the site occurs in the Undefended 0.1% model, The Defended 0.5% plus climate change model and the Undefended 0.5% plus climate change model. Flood avoidance measures is the appropriate mitigation in these scenarios and this has been implemented in the extant building(s).

The risk of flooding from canals, reservoirs and other sources is low. The flood risk from groundwater is low. The risk from sewer flooding and pluvial runoff is low.

Development drainage will not change the flood risk up stream or downstream of this location and as the impact of surface water flow from the site will be mitigated with minimal effect to the surrounding area, the risk of flooding from the development drainage is low. A package treatment on site will deal with foul drainage.